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EXAMINER

LIU, MING HUN

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 11/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/074,119

Applicant(s)

MCCARTNEY, RICHARD I.

Examiner

Ming-Hun Liu

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18, 20-32 and 34-40 is/are rejected.
- 7) ☒ Claim(s) 19 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15-17 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 reads that a “plurality of column line groups each associated with a column driver circuit”, however it is unclear whether this column driver circuit is the same as the column driver circuit disclosed on line 1 of the claim. It is unclear as to whether the applicant is referring to a single column driver circuit, or a plurality of different column drivers individually associated with the plurality of column line groups. The claims were reviewed in this office action under the assumption that the applicant intended the claim to read “plurality of column line groups each associated with the column driver circuit”, where by limiting the column driver circuit to a unique circuit.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-12, 15, 22-26, 29 and 36-40 are rejected under 35 U.S.C. 102(e) as being unpatentable by US Patent 6,628,273 to Rindal et al.

In reference to claim 1, it can be seen in figures 2 and 3 that Rindal discloses a method of operating a matrix LCD display with a row and column driver (figure 2, items 210r and 210c respectively). It is apparent from figure 2 that the columns of the LCD display includes a first column closest to row driver and a second column further away. The row enable signal (figure 3, item 295) is subject to a propagation delay in the direction moving away from the driving circuit (210r).

Rindal also teaches that the row enable propagation (denoted by item 295) must be matched with the driving signals (figure 4, items 211, 212 and 213) where the driving signals experience delays at predetermined times that correspond with the propagation delays of the enable signal (column 5, lines 41-52).

In reference to claim 2, it can be seen from figures 2 and 3 that Rindal discloses a method of operating a matrix LCD display with a row and column driver where the driving method is essentially the same as the method described in the rejection of claim 1 with the exception of switching the roles of column and row components, namely switching column propagation delay 290 for delay 295.

As to claim 3, the claim is rejected on the grounds outlined in the rejection of claim 2.

Claims 4-6 are rejected on essentially the same grounds as claims 1 and 2. Specifics concerning generating the delay substantially equal to the propagation delay is anticipated by Rindal on column 6, lines 2-5.

In reference to claim 7, the method tracks the display line to be activated and selects the line in according to the tracking conducted (column 7, lines 1-10).

In reference to claim 8, Rindal discloses components to activate the display lines at different times (figure 2, delay elements 230).

In reference to claims 9-11 are rejected on grounds similar to the rejection of claims 1 and 2, specifically relating to figure 4 and column 5, lines 41-52.

In reference to claim 12, it can be seen from figure 2 that Rindal's invention includes propagation delay (item 230) elements and a plurality of signal taps between signal lines where the signal can be tapped (column 2, line 67 – column 3, line 4).

Referring to claim 15, it can be seen from Rindal's figure 2, that he discloses a column driver (item 210) where the column lines are driven.

Claim 22 is rejected on the grounds similar to the rejection of claim 2.

Claims 23 and 24 are rejected on the grounds similar to the rejection of claim 1.

Claim 25 is rejected on the grounds similar to the rejection of claim 7.

Claims 26, 29, 36 and 37 are rejected on grounds outlined in the rejection of claims 1-6.

Claims 38-40 are rejected on grounds outlined in the rejection of claims 1-6.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13, 14, 16-18, 20, 21, 27, 28, 30-32, 34 and 35 are rejected under 35 U.S.C.

103(a) as being unpatentable over the combination of Rindal and US patent 5,854,615 to Hush.

In reference to claims 13 and 14, Rindal discloses a display line driver circuit similar to the one disclosed by the applicant however Rindal does not specifically define the details of the delay unit. Hush in a similar invention that deals with propagation delay compensation teaches the use of a delay block using a delay locked loop (DLL) with resistive and capacitive components (figure 3 and column 4, lines 37-38). One skilled in the art understands that DLL circuits with resistive and capacitive components are commonly used as delay circuits; Hush illuminates a convention that Rindal is silent on.

In reference to claim 16, Hush teaches that a pulse sync signal coupled to the signal taps (column 2, lines 21-24).

In reference to claim 17, there is no disclosed criticality as to why the pulse generator must be inverted to a falling edge. Signal inversion is a simple adjustment that ones skilled in the art understand how to perform, a design criterion that is commonly adjusted in the testing of the circuit.

In reference to claim 18, it is clear that Hush discloses an adjustment circuit (column 2, lines 26-36 and item 66).

In reference to claims 20 and 21, Hush does not explicitly state that the adjustment circuit comprises a variable resistor coupled to a capacitor, however on column 4, lines 25-27 Hush teaches that the RC time constant is a determining factor in delay timing. Though Hush chooses to adjust the delay timing by adjusting the voltage threshold, it would have been obvious to one

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skilled in the art to understand that the same limiting effect can also be achieved by adjusting the resistive value or the RC circuit. One would have been motivated to incorporate variable resistive elements to the RC circuit so that the delay timing may be adjusted to ensure proper signal synch. Furthermore, one skilled in the art understands that to increasing the delay, the resistive element must be increased, resulting in a larger RC constant.

Claim 27 is rejected on grounds similar to the rejection of claim 13.

Claim 28 is rejected on grounds similar to the rejection of claim 14.

Claim 30 is rejected on grounds similar to the rejection of claim 16.

Claim 31 is rejected on grounds similar to the rejection of claim 17.

Claim 32 is rejected on grounds similar to the rejection of claim 18.

Claims 34 and 35 are rejected on grounds similar to the rejection of claims 20 and 21.

#### ***Allowable Subject Matter***

7. Claims 19 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ming-Hun Liu whose telephone number is 703-305-8488. The examiner can normally be reached on Mon-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras can be reached on 703-305-9720. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Ming-Hun Liu

A handwritten signature in black ink, appearing to read 'Steven Saras', written in a cursive style.

STEVEN SARAS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600